

CLEAN VERSION OF CLAIMS 1, 4, 6, 7, 9, 11, 12, 19, 20 and 24 to
be substituted for counterpart claims:

1. (Amended) An article comprising:
a gasoline engine having an exhaust outlet; and
a close coupled catalyst in communication with the exhaust
outlet, the close coupled catalyst comprising a close coupled catalyst
composition having substantially no oxygen storage components, the
catalyst composition comprising:

a support;
a palladium component;
optionally, at least one alkaline metal oxide selected from the
group consisting of strontium oxide, calcium oxide and barium oxide;
optionally, at least one platinum group metal component selected
from the group consisting of platinum, rhodium, ruthenium and iridium
components; and
optionally, at least one rare earth oxide selected from the group
consisting of neodymium oxide and lanthanum oxide.

4. (Amended) The article as recited in claim 1 further
comprising a zirconium oxide.

6. (Amended) The article as recited in claim 5 wherein the
support comprises at least one activated compounds selected from the
group consisting of alumina, silica, first zirconia and silica-
alumina, alumina-silicates, alumina-zirconia, and alumina-chromia.

7. (Amended) The article as recited in claim 6 wherein the
support comprises activated alumina.

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9. (Amended) The article as recited in claim 1 wherein the close coupled catalyst further comprises a close coupled catalyst carrier which supports the close coupled catalyst composition.

11. (Amended) The article as recited in claim 28 wherein there is:

from about 0.50 to about 3.5 g./in³ of activated alumina support;
at least about 50.0 g/ft³ of the palladium component; and
from about 0.05 to about 0.5 g/in³ of at least one alkaline earth metal component.

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12. (Amended) The article as recited in claim 11 wherein there is:

from about 0.05 g/in³ to about 0.4 g/in³ of strontium oxide;
from about 0.0 to about 0.5 g/in³ of the zirconium oxide; and

from about 0.0 to about 0.5 g/in³ of at least one rare earth metal oxide selected from the group consisting of lanthanum oxide and neodymium oxide.

19. (Amended) An article comprising:

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~~a gasoline-engine having an exhaust outlet;~~
a close coupled catalyst in communication with the exhaust outlet, the close coupled catalyst comprising a close coupled catalyst composition having substantially no oxygen storage components selected from the group consisting of cerium components and praseodymium components, the catalyst composition comprising:
a support;
a palladium component;

optionally, at least one alkaline metal oxide selected from the group consisting of strontium oxide, calcium oxide and barium oxide;

optionally, at least one platinum group metal component selected from the group consisting of platinum, rhodium, ruthenium and iridium components; and

optionally, at least one rare earth oxide selected from the group consisting of neodymium oxide and lanthanum oxide; and

a downstream catalyst located downstream of and in communication with the close-coupled catalyst, the downstream catalyst comprising an oxygen storage component selected from the group consisting of cerium components and praseodymium components.

20. (Amended) A method comprising the steps of:

operating a gasoline engine, having an exhaust gas outlet;

passing an exhaust gas stream comprising carbon monoxide and hydrocarbons, and optionally nitrogen oxide, from the exhaust gas outlet of the gasoline engine to a close coupled catalyst, the close coupled catalyst comprising a close coupled catalyst composition;

contacting the exhaust gas with the close coupled catalyst composition, the close coupled catalyst composition having substantially no oxygen storage components, the catalyst composition comprising:

a support;

a palladium component;

optionally, at least one alkaline metal oxide selected from the group consisting of strontium oxide, calcium oxide and barium oxide;

optionally, at least one platinum group metal component selected from the group consisting of platinum, rhodium, ruthenium and iridium components; and

optionally, at least one rare earth oxide selected from the group consisting of neodymium oxide and lanthanum oxide; and

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oxidizing at least some of the hydrocarbon and only a portion
carbon monoxide in the presence of the close coupled catalyst.

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24. (Amended) The method as recited in claim 20 wherein the
exhaust gas from the close-coupled catalyst to a downstream catalyst
comprises at least 10 percent of the carbon monoxide which passed into
the close coupled catalyst when measured according to FTP 1975.

CLEAN VERSION OF CLAIMS NEWLY ADDED CLAIMS 28 - 43.

28. The article as recited in claim 1 optionally comprising a
second zirconium oxide as a stabilizer.

29. The article as recited in claim 19 optionally comprising a
second zirconium oxide as a stabilizer.

30. The article as recited in claims 1 or 19 wherein the close
coupled catalyst composition thermally stable upon exposure to
temperatures up to 920°C.

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31. The article as recited in claim 1 or 19 wherein the close
coupled catalyst composition thermally stable upon exposure to
temperatures up to 1100°C.

32. The article as recited in claims 1 or 19 wherein the close
coupled catalyst composition thermally stable upon exposure to
temperatures up to at least 1100°C.

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33. The article as recited in claims 1 or 19 wherein the close
coupled catalyst composition further comprises at least one alkaline
metal oxide selected from the group consisting of strontium oxide,
calcium oxide and barium oxide.

34. The article as recited in claims 1 or 19 further comprising at least one platinum group metal component selected from platinum, rhodium, ruthenium and iridium components.

35. The article as recited in claims 17 or 19 further comprising a combined canister in which is located at least one of the close coupled catalyst and at least one downstream catalyst downstream of the close coupled catalyst.

36. The article as recited in claim 35 wherein the at least one downstream catalyst is a three way catalyst.

37. The article as recited in claim 35 wherein one downstream catalyst is adjacent to one close coupled catalyst.

38. The article as recited in claim 35 wherein the downstream catalyst is spaced apart from the close coupled catalyst.

39. The article as recited in claims 17 or 19 wherein the amount of the at least one close coupled catalyst is less than the amount of the at least one downstream catalyst.

40. The article as recited in claim 39 wherein the relative amount of the at least one close coupled catalyst is from 1/20 to 2, based on weight per volume, of the amount of the at least one downstream catalyst.

41. An article comprising:
a gasoline engine having an exhaust outlet; and
a close coupled catalyst located up to one foot from the exhaust outlet, the close coupled catalyst comprising a close coupled catalyst composition having substantially no oxygen storage components selected

from the group consisting of praseodymium and cerium components, the catalyst composition comprising:

- a support; and
- a palladium component.

42. The article as recited in claim 41 wherein the close coupled catalyst is located up to six inches from the exhaust outlet.

43. The article as recited in claim 41 wherein the close coupled catalyst is connected directly to the exhaust outlet.

In the specification:

Following is a summary of the amendments to the specification which are presented below.

At page 5, line 20, the sentence "Oxides of ...," should begin a new paragraph.

At page 11, line 2, delete "amount" and insert --amounts--.

At page 11, line 9, after "praseodymium" insert --oxide--.

At page 13, line 8, delete "lease" and insert --least--.

At page 18, line 17 delete "Serial No. 08/265,076" and insert --Patent No. 5,597,771--.

CLEAN VERSION OF AMENDED PARAGRAPHS IN THE SPECIFICATION:

At page 5 lines 10-22:

U.S. Patent No. 4,923,842 discloses a catalytic composition for treating exhaust gases comprising a first support having dispersed thereon at least one oxygen storage component and at least one noble metal component, and having dispersed immediately thereon an overlayer comprising lanthanum oxide and optionally a second support. The layer

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of catalyst is separate from the lanthanum oxide. The noble metal can include platinum, palladium, rhodium, ruthenium and iridium. The oxygen storage component can include the oxide of a metal from the group consisting of iron, nickel, cobalt and the rare earths. Illustrative of these are cerium, lanthanum, neodymium, praseodymium, etc.

Oxides of cerium and praseodymium are particularly useful as oxygen storage components.

At page 10, line 31 through page 11, line 15:

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The close-coupled catalyst composition of the present invention comprises components of the type used in a TWC catalyst composition except that there is substantially no oxygen storage components. The removal of the oxygen storage components from the close-coupled catalyst composition of the present invention results in controlled bypass of carbon monoxide. For the purposes of the present invention, components which have oxygen storage and release capabilities include cerium oxide and praseodymium oxide. Equivalent amounts of other rare earths having less significant oxygen storage capability are not considered to be components which have substantial oxygen storage and release capability. Additionally, platinum group metal components are not considered to be oxygen storage components. In particular, the close-coupled catalyst composition can be a three-way catalyst composition having substantially no ceria. Minor amounts of ceria or praseodymium oxide may be present as impurities or trace amounts. Oxygen storage component such as cerium oxide store oxygen and release it during operating conditions providing additional oxygen to enable the oxidation of hydrocarbons and carbon monoxides to proceed more efficiently. However, this function has been found to result in excess oxidation and overheating of the close-coupled catalyst.

At page 12, line 22, through page 13, line 10:

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The close-coupled catalyst composition of the present invention is substantially free of oxygen storage components such as ceria and praseodymia. The catalyst composition comprises a support which preferably comprises at least one compound selected from the group consisting of silica, alumina, titania and a first zirconia compound hereinafter referred to as a first zirconia compound. The composition further comprises a palladium component, preferably in an amount sufficient to oxidize carbon monoxide and hydrocarbons and reduce nitric oxides to have respective light-off temperatures at 50% conversion which are relatively low and preferably in the range of from 200 to 350 C for the oxidation of hydrocarbons. The composition optionally comprises at least one alkaline metal oxide selected from the group consisting of strontium oxide, calcium oxide and barium oxide with strontium oxide most preferred. The composition can optionally also comprise other precious metal or platinum group metal components, preferably including at least one metal selected from the group consisting of platinum, rhodium, ruthenium and iridium components. Where additional platinum group metals are included, if platinum is used, it is used in an amount of less than 60 grams per cubic foot. Other platinum group metals are used in amounts of up to about 20 grams per cubic foot. The composition optionally also can include a second zirconium oxide compound as a stabilizer and optionally at least one rare earth oxide selected from the group consisting of neodymium oxide and lanthanum oxide.

At page 17, line 33 through page 18, line 18:

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The downstream catalyst is preferably a three-way catalyst. Any suitable three-way catalyst known in the art can be used and, preferably comprises an oxygen storage component and in particular,